Remarks

The above Amendments and these Remarks are in reply to the Office Action mailed March 31, 2010.

I. Summary of Examiner's Rejections

Prior to the Office Action mailed March 31, 2010, Claims 1, 2, 5-9, 12, 13, 16-20, 29 and 30 were pending in the Application. In the Office Action, Claims 12, 13 and 16-20 were rejected under 35 U.S.C. §101 because the claimed invention is directed to non-statutory subject matter. Claims 1, 2 and 5-9 were rejected under 35 U.S.C. §112 second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1, 2, 5-9, 12, 13, 16-20, 29 and 30 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kampe et al. (U.S. Patent No. 6,854,069 hereinafter Kampe) in view of Pace et al. (U.S. Publication No. 2003/0050932 hereinafter Pace) further in view of Carr (U.S. Patent No. 4,718,002 hereinafter Carr).

II. Summary of Applicant's Amendment

The present Reply amends Claims 1-2, 5, 9, 12-13, 16 and 20; cancels Claims 29-30; and adds Claims 31-37, leaving for the Examiner's present consideration Claims 1-2, 5-9, 12-13, 16-20 and 31-37.

III. Claim Rejections under 35 U.S.C. § 101

In the Office Action, Claims 12, 13 and 16-20 were rejected under 35 U.S.C. §101 because the claimed invention is directed to non-statutory subject matter. Accordingly, Claim 12 has been amended as shown above. Applicant respectfully submits that Claim 12 as amended, and the dependent claims therefrom, now conform with the requirements of 35 U.S.C. §101. Reconsideration thereof is respectfully requested.

IV. Claim Rejections under 35 U.S.C. § 112

Claims 1, 2 and 5-9 were rejected under 35 U.S.C. §112 second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant respectfully submits that the claims have been amended to comply with the statutory requirement under 35 U.S.C. §112. Accordingly, reconsideration thereof is respectfully requested.

V. Claim Rejections under 35 U.S.C. § 103(a)

Claims 1, 2, 5-9, 12, 13, 16-20, 29 and 30 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kampe in view of Pace further in view of Carr.

Claim 1

Claim 1 has been amended to recite:

1. A system for high availability clustering of a group of computer nodes, comprising:

one or more computers interconnected to create a cluster network, each computer including a software cluster server, a cluster database, and a set of resources of multiple resource types, including software application servers, wherein each software cluster server operating at one of the one or more of the computers provides an application access to the set of resources on said computer, or at another one of the one or more computers interconnected to the cluster network;

wherein one of the one or more computers is designated as a group leader, and the other computers are designated as members within the cluster, and wherein a cluster configuration file is maintained by the group leader to manage configuration information about the cluster, including the set of resources on each one of the one or more computers;

a resource interface provided by said software cluster server that provides an abstraction layer that allows the software cluster server to receive requests from the application and communicate the requests to said set of resources;

a plurality of plugins that are plugged into the resource interface to provide a set of application-specific callbacks from the software cluster server to the set of resources, which application-specific callbacks facilitate communication of the requests from the application to the set of resources, wherein the resource interface accepts additional plugins that are plugged into the resource interface to provide application-specific callbacks from the software cluster servers to other resource types;

wherein each computer in the cluster communicates the set of resources available on said computer to the group leader, and wherein when the requests from the application are received, the group leader

determines the availability of the set of resources on each one of the one or more computers by referencing the cluster configuration file, and

directs the request to the computer having the requested resource

wherein the system can be extended by adding additional computers with cluster servers and resource interfaces operating thereon.

Kampe discloses a system and method for achieving high availability in a networked computer system. As disclosed therein, the networked computer system includes nodes that are connected by a network. The method includes using high-availability-aware components to represent hardware and software in the networked computer system, managing the components to achieve a desired level or levels of redundancy, and monitoring the health of the networked computer system, including the health of the components and the nodes. (Column 2, lines 38-43). Components can be divided into classes and sub-classes. For each standard class and sub-class, there may be an interface specification that describes standard properties and methods that components of that class may be required to support. (Column 7, lines 15-22). Further, the class specifications and their templates may be used to provide a framework for implementing new components. They may also enable new component implementations to interoperate with existing applications and management agents. (Column 7, lines 25-29).

Carr discloses a method for communicating updated information among processors in a distributed processing system. (Abstract). As disclosed therein, a global update broadcast is performed serially by sending a global update message to each processor in accordance with the update order. This serial transmission sequence is followed until every up processor 12 of the system has been sent and has acknowledged the global update message. (Column 7, lines 16-25).

Pace discloses a computer system and method for transactional deployment of one or more components over a multi-tier network. (Abstract). As disclosed therein, a package boundary may be defined according to at least one of an open API, a proprietary API made available to a user/developer, or some other extension framework. For example, a TCP/IP standard library, a C/C++ library, a CORBA library, Java Servlets, Java Server Pages ("JSP"), Enterprise Java Beans.TM. ("EJB"), Java DataBase Connectivity ("JDBC"), Java Messaging Service ("JMS"), Hypertext Markup Language ("HTML"), HyperText Transfer Protocol ("HTTP"), and Wireless Markup Language ("WML") may all be examples of an open API that may serve as part or all of a package boundary according to one embodiment of the present invention. (Paragraph [0313]).

In the Office Action, it was asserted that Kampe discloses, a plurality of plugins that are plugged into the resource interface to provide a set of application-specific callbacks from the cluster server to the set of resources, wherein the system includes a plugin for each resource type corresponding to the different application server, and wherein each plugin implements a resource API to encapsulate the plugin's particular resource type-specific behavior and to isolate the cluster server from said behavior while providing access to its pool of resources.

However, Applicant respectfully submits that based on the above description, Kampe appears to disclose that components can be divided into classes and sub-classes, and for each

standard class and sub-class, there may be an interface specification that describes standard properties and methods that components of that class may be required to support, which can also be used as a framework for implementing new components. Applicant respectfully submits that an interface specification that describes standard properties and methods that components may be required to support does not appear to disclose a plurality of plugins that are plugged into the resource interface to provide a set of application-specific callbacks from the software cluster server to the set of resources. Nor does Kampe appear to disclose the resource interface that accepts additional plugins that are plugged into the resource interface to provide application-specific callbacks from the software cluster servers to other resource types.

To more clearly recite the embodiment therein, Claim 1 has been amended to recite a plurality of plugins that are plugged into the resource interface to provide a set of application-specific callbacks from the software cluster server to the set of resources, which application-specific callbacks facilitate communication of the requests from the application to the set of resources, wherein the resource interface accepts additional plugins that are plugged into the resource interface to provide application-specific callbacks from the software cluster servers to other resource types. As described in the Specification, the plugins provide a mapping between the framework's resource management abstractions and any resource type-specific way of realizing the particular functionality. For example, as shown in Figure 4, the resource interface may include a WebLogic Server plug-in which interfaces with a JMX interface to provide access to a plurality of WebLogic Server instances. Additional third party plug-ins can be provided as necessary to allow access to other application server instances. In this way, the system is easily modified or extended to provide access to other resource types, for example to other types of application server products.

Additionally, in the Office Action it was asserted that Carr discloses a Global Update Protocol mechanism that employs a distributed global lock with sequence numbers to serialize propagation of global events across active members of the cluster, and that Pace discloses facilitating a wide range of management protocols, including Java management extensions.

However, to more clearly recite the embodiment therein, Claim 1 has been further amended to recite that the method includes wherein each computer in the cluster communicates the set of resources available on said computer to the group leader, and wherein when the requests from the application are received, the group leader determines the availability of the set of resources on each one of the one or more computers by referencing the cluster configuration file, and directs the request to the computer having the requested resource. Applicant respectfully submits that Kampe, Carr and Pace when considered alone or in combination, neither anticipates nor renders obvious, these features.

In view of these comments, Applicant respectfully submits that Claim 1, as currently amended, is neither anticipated by, nor obvious in view of the cited references. Reconsideration thereof is respectfully requested.

Claims 12 and 29

Claim 29 has been canceled, rendering moot the rejection of this claim. The comments provided above with respect to Claim 1 are hereby incorporated by reference. Claim 12 has been amended to recite features similar to those described above with respect to Claim 1. For similar reasons as provided above with respect to Claim 1, Applicant respectfully submits that Claim 12, as amended, is likewise neither anticipated by, nor obvious in view of the cited reference. Reconsideration thereof is respectfully requested.

Claims 2, 5-9, 13, 16-20, and 30

Claim 30 has been canceled, rendering moot the rejection of this claim. Claims 2, 5-9, 13 and 6-20 depend from and include all of the features of Claims 1 or 12. These claims are not addressed separately, but it is respectfully submitted that the claims are allowable at least as depending from an allowable independent claim, and further in view of the amendments to the independent claims, and the comments provided above. Reconsideration thereof is respectfully requested.

VI. Additional Amendments

Claims 31-37 are added by the current Reply. Applicant respectfully requests that new Claims 31-37 be included in the Application and considered therewith.

VII. Request for Interview

In the event the above remarks fail to place the case in condition for allowance, Applicant respectfully requests the opportunity to interview with the Examiner at their convenience, and prior to the issuance of a subsequent Office Action, to assist in expediting prosecution.

VIII. Conclusion

In view of the above amendments and remarks, it is respectfully submitted that all of the claims now pending in the subject patent application should be allowable, and reconsideration thereof is respectfully requested. The Examiner is respectfully requested to telephone the undersigned if he can assist in any way in expediting issuance of a patent.

The Commissioner is authorized to charge any underpayment or credit any overpayment to Deposit Account No. 06-1325 for any matter in connection with this response, including any fee for extension of time, which may be required.

Respectfully submitted,

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